As a parent of young children in rural New Hampshire, I spent dozens of summer afternoons on the grounds of the Squam Lakes Science Center. The boys liked the children's play center the best, in the middle of the trail, between the mountain lions and the black bears. But I liked best the meadow at the end of the trail, and especially the floating wooden walkway through a fen, one of the many meandering waterways created as Squam Lake drains into Little Squam, and from there into the Pemigewasset River. The sun shone hot on that open meadow, and in July we began to be able to see the salamander tadpoles under the surface of the fen waters. Soaking in the warmth of the sunshine, they flitted just under the surface of the water. As the summer deepened into fall, they became more elongated and distinct from the frog tadpoles, and eventually left the water to find their adult homes in leaf litter or underneath stones. But those summer afternoons of watching the young salamanders in the sunny world of the pond water—that was my favorite part of the science center trail.

One of the reasons I found the amphibians so fascinating was how separate they were from humans. The black bears turned to look at us laconically from their enclosure. Approach the mountain lions with a three-year-old in tow, and the lioness would stalk the toddler from her side of the glass, watching his every move. She saw us for what we were: mammals certainly, prey if we were small enough. We lived in the same world with her. The salamanders, on the other hand, were—one imagines—in their own world. By virtue of being an exhibit on the path, they were not in any way tame. They were separate. Wild.

As wild and enchanted as the salamanders seemed to me, they were of course very much in the world I lived in. In a fen like the one through which the path wandered,

salamanders are opportunistic predators that eat whatever they can find, and are eaten in turn by birds, fish, shrews and possums. But in the headstreams of small rivers, too shallow or turbulent for fish to thrive, salamanders are often the only vertebrates, and provide some of the densest protein sources for other predators. Suddenly we are very much in the same world, since the pollution or even undisturbed existence of that stream is more likely my responsibility than the salamanders. The world is wilder than we ever give it credit for. The sacred essence of life is in all things. Wild animals may not know about us, but we must take responsibility for them and their world. We must remember how to live in harmony with the earth. We must recommit to the well-being of all creatures.

When people have lived in a landscape for a long time, they learn how to partner with it. Partnership benefits both the landscape and the people. There's evidence that before the arrival of Europeans, South American Indians cultivated the rain forest to make human life possible along its rivers and under its canopies. At the same time, all over the world, when ancient humans discovered a new landscape, there is fossil evidence that they were enormously destructive to the new ecosystem. From the time that humans first arrived in North America, to human arrival on the world's remote islands in more recent history, the moment people come to a new landscape is a moment of destruction for the animals there. It takes time to learn to live in balance with the earth. It takes understanding the specific place where you are.

When that happens, people and the environment can become partners. The people became part of the food chain and the ecosystem, instead of lords over it. In Scotland, the earliest human settlers brought with them cattle that mixed with the wild

aurochs already living on the land. In time, the cattle evolved and took over the niche of the aurochs, becoming Kyloe cows, “small, hardy black cattle” adapted to life in the rugged Scottish environment (Bignal and McCracken 155). In the winter, herders kept their cattle close by their homes, but in the summer they drove them to less-occupied grazing grounds in the lowlands called shielings. As people moved into the lowlands, cattle grazing moved to the highlands. Wherever the cattle went, their behavior promoted biodiversity. According to researchers, their “herd behaviour can introduce seasonal and cyclic pressures that are virtually impossible to produce in any other way—not only through their grazing but through their trampling, dunging, resting, and ruminating… (156).” This traditional form of cattle herding in Scotland, which persists today, has worked for 5,000 years. It is a partnership between the people, the animals they rely on, and the land. Industrial cattle ranching, however, does not reproduce these benefits. Biodiversity of the surrounding environment is not a goal of industrial farming.

Sometimes modern people tend to think that living in harmony with the earth was something done by “primitive” peoples; we may assign a connection with the earth to native peoples of the Americas or to hunter-gatherers in far-off places. But Scottish people herd cattle in this way today, and did so commercially until World War II. Organic farmers and backyard gardeners today work with the land, not seeking simply to impose their will upon it. Anywhere people have lived in long relationship with and dependence on the earth, they have learned how to be its partner in flourishing.

One of the last landscapes on earth to be quote-unquote “discovered” by Europeans was the Arctic. Native peoples have lived in the Arctic for thousands of years and have, by necessity, become well-adapted to that harsh landscape. When we think

of the Arctic, we may think of many charismatic animals like polar bears, wolves, and arctic hares. Like all creatures in the north, their habitats are threatened by oil development and climate change. But I want to focus today on perhaps a lesser known arctic animal, the musk ox.

Musk oxen are shaggy, horned cattle that look somewhat like yaks, but are much more closely related to sheep than to other oxen. They are dark brown all over, except for the lighter hair on their backs and their foreheads. They are expert foragers, flourishing in those parts of the lower arctic where prevailing winds leave vegetation clear in the winter, or pockets of more temperate weather lengthen the growing season. They are unique among ruminants in the way they defend the herd from attack. When there is a threat—a wolf, or a human—the musk oxen gather themselves together in a rough circle. Their flanks touch, and they face outward. Nursing mothers, calves and weaker members of the herd gather toward the middle of the circle. The horns point out. To get to the calves and mothers, a predator must go through the entire herd. At the turn of the 20th century, when Europeans and Americans wanted baby musk oxen for their zoos, they had to kill many adults to capture one baby. Natural historian Barry Lopez, whose book *Arctic Dreams* provided my information about musk oxen, reports that for every one calf captured five adults had to be killed. Zoos finally made an international agreement not to accept further musk oxen, which stopped the slaughter (74).

In some places musk oxen were hunted nearly to local extinction. In 1853, a European ship foundered and was abandoned in the straits off the north coast of Canada. 200 miles away, Eskimos on Victoria Island learned of the abandoned ship and

the cache of materials it contained, not least of which was the wood of the ship itself for building. They journeyed to the shipwreck and made camp over the course of several seasons. Along the way, they slaughtered the musk oxen they found for food. By 1890, the ship's cache was exploited and the musk oxen population on Banks Island had collapsed.

It is not any one culture or ancestry that makes us good stewards of the earth. It is familiarity, respect, and partnership. It is living in a place long enough, and close enough to the earth, to understand what the earth is telling you. We live here, now. We can still hear what it has to say.

All over the world there are different cultures and religions that consider every living thing to have a spirit living inside them. Theologically this is called "animism," and it is a feature of native religions today in Japan, North America, Africa, India—anywhere there are people, really. Slightly different is the Buddhist concept that every being has a true enlightened nature, an essence, that is not different in kind from the essence of any other being. The lovingkindness meditation asks that "all beings" may be peaceful, at ease, and well. All sentient beings are thought to have a womb inside them that is nurturing their Buddha-self, their enlightened state. This is a way of saying in spiritual terms that non-human creatures are deserving of our respect and consideration. They are not objects of our will, but subjects and partners in life.

If we modern humans have a unique spirit in the animal kingdom, perhaps it is that we are the animals who can choose how we treat the others. We are not only at the mercy of our environment and our place on the food chain. We are able to decide how we walk on this earth: in harmony or in ruin, with many wild partners or with none.

Today, salamanders are numerous all over the eastern United States. There has been an overall decline in amphibian species related to a fungal disease, and pollution has caused certain North American salamanders to become threatened, such as the hellbender salamander in Arkansas. The world's largest salamander, the Chinese giant salamander, is critically endangered. The little orange species my children found under rocks in New Hampshire are doing fine for now.

Musk oxen are another hopeful story. Populations were reintroduced to Norway and the Labrador Peninsula, where they gained a foothold; other attempts to introduce musk oxen to Svalbard and Iceland were not successful. After their overhunting on Banks Island and elsewhere in the arctic, no musk oxen were seen there for decades. But in 1952, a biologist on Banks Island saw a lone male musk ox. In the 1960s animals were seen sporadically. By the 1980s there were 18,000 musk oxen on Banks Island, and today there are approximately 47,000—almost half the worldwide total. In a climate of respect all life can flourish.

Today the world faces its sixth mass extinction, this one caused not by natural climate fluctuations but by the presence and spread of humans. Since 1970, the human population on earth has more than doubled. At the same time, the number of wild animals has declined by two-thirds. Unlike our ancestors, we know this is happening. We can choose to live in partnership with the earth our home.

Today, although human populations are still growing, the rate of growth is slowing and is expected to begin to decline within 100 years. Women's education and ability to control their fertility are major drivers of this change. In a world of slowing growth, we do not need to be exploiting more and more of the earth's resources.

Supporting human life through reuse, conservation and balance is possible. There are things individuals can do, as well. If you have a garden, plant native plants in order to support native wildlife. Like the Iroquois planting the Three Sisters together, learn what supports the local ecosystem. Root yourself where you are. Listen to the earth. Any good gardener knows this: the garden is not an enemy to be subdued but a partner to be worked with. We have no future on this planet without the other beings which occupy it with us. May we learn to live in balance for their sake and for ours. I love you all. Amen.

Sources

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